

tingency mission, you will find several key documents available.

The Staff Weather Officer in the Republic of Korea (ROK) has produced a pamphlet on Korean light and weather data entitled *Weather and Korean Climatology*, 607 WS Pamphlet 15-5, 1 January 1995. The DEAR contains environmental hazards and diseases common in both North and South Korea. It also identifies two varieties of poisonous snakes, three poisonous insects, and two poisonous plants (poison ivy and poison sumac) in the ROK as well as the annual high and low temperatures (30 degrees and -9 degrees Celsius, respectively).

Maps for South Korea are listed in the DMA *Catalog of Maps, Charts, and Related Products*, Part 3, Topographic Products, Volume III, Asia, Australia, and the Pacific Islands All Scales. Maps are available in scales of 1:25,000, 1:50,000, and 1:250,000, and there are maps available for some cities. Additionally, Gazetteers are available for both North and South Korea.

Several new pocket-sized information handbooks are available:

- The DIA *North Korean Handbook*, PC-2600-6421-94.
- The DIA book *North Korea: The Foundations for Military Strength*, dated October 1991 (contains a good overview of the North Korean military).
- DA Pamphlet 550-81, *North*

*Korea—A Country Study*, dated 1994, the area handbook for North Korea.

- DA Pamphlet 550-41, *South Korea—A Country Study*, dated 1992, the area handbook for South Korea.

- DA Pamphlet 360-414, *A Pocket Guide to the Republic of Korea*, 1987.

- The Marine Corps Intelligence Activity's *South Korea Country Handbook*, MCIA-2660-KS-010-94, dated 1 May 1994.

- The U.S. Air Force's *Pacific Theater Recognition Guide*, Part 1—Aircraft, DIAM 57-25-132, 1 July 1988, identifies the aircraft in the theater.

Additionally, the Department of State *Background Notes* for North and South Korea, are dated July 1989 and April 1991, respectively; and an interactive video disk—Combat Vehicle Identification Module Part 2, Korean Equipment, PIN -710027DA, Release 7-19, October 1993—is available for conducting vehicle recognition training.

Some of the articles on North Korea listed in the *Index to Military Periodicals*, 1992, are "North Korean Infantry Battalions" (INFANTRY Magazine, September-October and November-December 1992), and "North Korean Special Purpose Forces" (*Special Warfare*, October 1992). The Department of State's *Pattern of Global Terrorism 1994* lists North Korea as one of the state-

sponsored terrorism countries. And *For Your Eyes Only* gives a day-by-day summary of what is occurring in the North Korean nuclear crisis.

A look at the daily newspaper shows that troops can be deployed to a variety of places on short notice, and units must be prepared. It is quite possible that combat support or combat service support units will be the first to go, and these units are the most dependent on higher headquarters for intelligence information.

As an S-2, you must make your intelligence requirements known to your higher headquarters and then notify your commander if these requirements are not being met. The day of alert notification is not the time to begin research, or to point fingers at higher headquarters. If you're not getting what you need, head for the nearest library. Or, since many of the references mentioned are now available on the "information superhighway," a computer and a modem may be all you need.

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# Field Expedient Map Making

LIEUTENANT COLONEL MARTIN N. STANTON

One of the most annoying aspects of my battalion's operations in Somalia was the lack of adequate maps of the major cities and towns. The units were issued 1:100,000 (ex-Soviet Union)

maps, but these were useless for urban environments, and the 1:25,000 and 1:15,000 maps of Mogadishu and Kismayu, respectively, did not show enough detail. There were no maps of

other major towns, such as Afgoi, Marka, and Baidoa. This deficiency proved to be a significant command and control challenge in more than one operation.

As a result, the 2d Battalion, 87th Infantry, 10th Mountain Division, undertook a series of map-making missions in the lower Shabele Valley region, using its scout platoon. The intent of these missions was to create a reliable sketch map of each of the towns in the battalion's area of operations. This effort met with considerable success, although opportunities to use the maps were limited (soon after the battalion left, its replacement battalion was sent to Mogadishu).

The following are some suggested techniques for creating your own town maps for use by subordinate leaders:

The key tool in field expedient map making is the small lightweight GPS (global positioning system) receiver (SLGR). This device enables units to plot positions accurately to within 10 meters. The SLGR can also show the distance between points, which allows a map maker to maintain scale and proper spatial relationships between streets. With these two capabilities, any scout squad should be able to produce a reasonably accurate street map of any town.

The technique for this type of map making is fairly simple and is normally a three-day process:

#### **Day One:**

- Identify the area to be mapped; that is, the outside boundaries of your map. (Normally, this will be the edge of the built-up area, but it doesn't have to be.) Plot way points on the main roads leading into the town.

- Using the way points on the outside of town as starting references, plot all the main roads in the town. Take readings for line-of-sight between way points (this part is most important). This type of map making is a connect-the-dots drill. The map making team moves along like an inchworm: One part of the team stays where the last reading was taken and watches the other proceed until it is out of sight or reaches a major road intersection. Then the lead element of the team halts and takes a new GPS reading; the following element moves up to the new way point, and the process is repeated.

- Plot all major linear terrain

features, such as coastlines, rivers, and deep ravines.

- Once all GPS plotting is complete, the team returns to a secure area and creates a rough map of the town, showing the main roads and major linear terrain features.

#### **Day Two:**

- Using the sketch map of the town's main roads, go to the town and put in all the side streets. (This can be more tedious and time-consuming than the first day's efforts, and may require



several days in larger towns.) The technique for marking the side streets and alleys is the same as that used for the main roads.

- Return to your secure area and plot all the side streets.

#### **Day Three:**

- With your updated street map, go again to the town and plot all the major buildings—government buildings, hospitals, theaters, warehouses—and such areas as market places.

- Using your GPS, plot UTM (universal transverse mercator) grid lines on the map.

By the end of Day Three, you should have a product worthy of mass reproduction and dissemination.

Normally, the only reproduction aids available to an infantry battalion are a simple copier and some form of lap-top computer. Unless you have a real computer whiz in the unit, it's better to plot your maps by hand, using metric rulers and simple drafting tools. You will also need a flat dry working surface and a way to secure paper to it.

The size of the town you're dealing with, or the intricacies of its winding

side streets, may require using more than one sheet of copier paper. In this case, connect as many blank sheets as you need to create the master map. After the map is finished, you can break it up into its individual sheets for reproduction and dissemination. A copy of each map produced should be sent to the S-2 or G-2 at the higher headquarters for distribution.

In addition to creating maps, the GPS team can be used to improve or update existing ones. For example, the Mogadishu map had several grid squares consisting of cross-hatched streets that provided little terrain reference. The GPS teams can plot prominent buildings and other terrain features onto the existing map to provide reference points for maneuver. These plotted points can then be disseminated to all subordinate leaders.

Map making missions require the same tactical security as any other operation in a low-intensity conflict environment. The number of GPS teams involved in the plotting can vary with the size of the town and the number of GPS systems available, and each team must have dedicated security that allows it to concentrate on its tasks. A good rule-of-thumb is to plan on having a squad-sized security element for each team.

Obviously, the maps produced by our teams were not as good as maps created by professional surveyors; no elevations were plotted because of the time it would have taken, and the maps were done in black-and-white. But they were a tremendous improvement over crude or nonexistent maps.

Units that find themselves confronted with inadequate maps in future missions of this kind should be prepared to use techniques such as these to improve existing maps, or even to create their own.

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